

Dominika Vrbnjak, Majda Pajnkihar, John Nelson

12 Measuring the Caritas processes: Slovenian versions of the caring factor survey

Abstract: In Watson's Theory of Transpersonal Caring, it is mentioned that the concept of caring can be assessed by ten Caritas processes®. Initial psychometric evaluation of Slovenian instruments for measuring the Caritas process showed adequate psychometric properties. However, a further validation and testing the construct validity in a larger sample was suggested. Therefore, the study aimed to further evaluate the psychometrics of three Slovene versions of the Caring Factor Survey (CFS) among nursing staff. A cross-sectional study was carried out. A total of 1,295 nursing staff in 11 Slovenian hospitals were requested to take part in the study. Slovene version of the 20-item CFS-Care Provider Version, 10-item CFS-Caring of Manager, and 10-item CFS-Caring of Co-workers were used to collect data. Descriptive and inferential statistics were used. The study provided a shorter, valid, and reliable version of the CFS-Care Provider Version for Slovene hospital environments. The study also confirmed that the Slovene CFS for assessing the caring of managers and co-workers, as asserted in Watson's theory, are valid and reliable instruments. These instruments can be used for the evaluation of measuring caring in hospital settings.

Keywords: Psychometric evaluation, Item-reduction, Caring, Caritas processes

12.1 Introduction

Caring is an essential concept in nursing [1], with no simple definition [2]. It includes caring for self and for others [3], humanity, compassion, authenticity, promotion of well-being [2], and intimate interpersonal relationships [4]. There are several caring theories, including Jean Watson's Theory of Transpersonal Caring, which is most known and used worldwide in nursing practice, education, and research. The theory combines the "essence of contemporary nursing and wholeness of mind, body, and soul as person-centred transpersonal caring" [1].

Caring, as a latent construct, can be measured using formal measurement tools. Several instruments have been created to measure complex phenomena like caring [5–7]. Tools provide objective indicators to generate data on patients' and care providers' experience of caring [5]. Measuring caring can also contribute to empirical validation and refinement of theory, as understanding is sought of relationships between caring and healing outcomes [5]. Researchers developed more than 20 tools to assess caring and more than six tools to measure caring, from the original Watson's

Theory of Transpersonal Caring and her ten caring factors [8]. Watson refined her theory, and Caritas processes have been proposed [9, 10]. However, none of the developed instruments had incorporated the contemporary concept of the Ten Caritas processes, which combines caring, love, and self-caring practices [11] and include embracing loving-kindness, inspiring faith-hope, trusting transpersonal, nurturing relationships, forgiving all, deepening creative self, balancing learning, co-creating Caritas field, ministering humanity, and open infinity [9].

Therefore, the Caring Factor Survey – CFS, an instrument that measures Ten Caritas processes, has been developed [12]. Derivation tools within this study aimed to measure the experience of Caritas processes provided by care providers (CFS-CP) [13], care managers (CFS-CM) [14], and co-workers (CFS-CC) [15].

The original CFS CP was developed and tested as a 20-item scale, with two items for each Caritas process [13]. Further psychometric evaluation resulted in a reduced 10-item questionnaire [16]. Other versions, CFS-CM and CFS-CC were developed as 10-item scales. All three versions implement a 7-item Likert scale (1 – strongly disagree, 7 – strongly agree).

Initial psychometric evaluation of Slovenian tools for measuring the Caritas processes showed acceptable psychometrical properties [4, 17]. Nonetheless, further validation and testing of construct validity in a larger sample size were suggested.

12.2 Aim

To evaluate the construct validity and internal consistency of the CFS for care providers, managers, and co-workers among Slovene nursing staff. The authors of this study also sought to evaluate the item reduction from 20 to 10 items for CFS-CP and the discriminant validity to measure the Watson's Caritas processes.

12.3 Methods

The study's results were based on secondary data analysis from a cross-sectional study [4].

12.3.1 Setting and sample

A convenience sample of nursing staff working on surgical and internal medicine wards in eleven healthcare institutions in Slovenia was included. Inclusion criteria were nurses and nursing assistants employed by the hospitals. The exclusion criteria were nursing staff like nurse managers, who were not involved in patient care. Of

1,295 administered surveys, 790 were returned (61% response rate) [4]. The sample size exceeded the recommendation of 10 participants per scale item [18], and the recommendation by Tabachnik and Fidel, who suggest that a sample of 400 is adequate for factor analysis [19].

12.3.2 Data collection and ethics

Three different versions of the CFS, CFS-CP [16], CFS-CM [14], and CFS-CC [15] were used to measure the Caritas processes. The process of developing Slovenian versions of CFS can be found elsewhere [4, 17].

Data was gathered between October 2015 and March 2016. The researcher, nursing manager or study-designated coordinator distributed surveys at the wards on day shifts. Respondents were provided two weeks to respond and submit their survey. The return of a completed survey was considered as willingness to take part in the research. Permissions from the included healthcare institutions and the National Medical Ethics Committee (No. 127/07/14) were sought. Participation in the survey was voluntary. Anonymity was assured as respondents returned the completed surveys in sealed envelopes or boxes, with no identifying information.

12.3.3 Data analysis

Descriptive statistics from each of the CFS tools are presented with mean values and standard deviations. Higher scores indicate perceptions of more caring [20]. Principal component analysis, oblique rotation, and Eigenvalues greater than 1.0 for factor loading with Keiser-Meyer-Olkin (KMO) for model fit, desiring at least 0.85 [19], were used to evaluate the construct validity of the selected instruments, and to reduce the 20-item CFS-CP to 10 items. Bartlett's test of sphericity was also used to determine the appropriateness of PCA [21]. Cronbach's alpha (acceptable above 0.7) and corrected item-total correlations (acceptable above 0.3) were utilized to evaluate internal consistency [22]. Discriminant validity of the CFS-CC and CFS-CM are presented elsewhere [4], while the discriminant validity of the CFS-CP tool was tested within this current study. The variations of mean scores were evaluated for all CFS-CP items to identify variations. CFS-CP differences between both wards were analysed with the Mann-Whitney *U*-test.

12.4 Results

Most respondents were female ($n = 684$, 87.50%) nursing assistants ($n = 378$, 51.10%) who worked in the surgical ($n = 507$, 64.20%) or internal medicine wards ($n = 278$, 35.40%), and reported working a mean of 16.19 years ($SD = 11.06$). The average age was 37.58 ($SD = 10.02$). The highest mean for all items was found for the Caritas process, Teaching and learning, while the lowest was for Miracles for CFS-CC and CFS-CM. Decision-making was found with the lowest mean score for CFS-CP. Descriptive statistics of the 20-item CFS-CP, 10-item CFS-CM, and the 10-item CFS-CC are shown in Tab. 12.1.

Tab. 12.1: Descriptive statistics of Cfs tool.

Caritas process	20-item CFS-CP			10-item CFS-CM			10-item CFS-CC		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
1 Practice loving-kindness	748	5.92	.30	744	5.34	1.50	748	4.93	1.45
2 Decision-making	745	5.39	.39	746	5.30	1.48	748	5.00	1.42
3 Instil faith and hope	746	6.00	.27	747	5.31	1.45	748	5.08	1.34
4 Teaching and learning	745	6.05	.21	747	5.44	1.46	752	5.34	1.23
5 Spiritual beliefs and practices	746	5.96	.23	746	4.97	1.69	743	4.99	1.42
6 Holistic care	742	5.95	.26	746	5.17	1.59	746	5.05	1.38
7 Helping and trusting relationship	747	5.84	.39	746	5.27	1.56	747	5.25	1.30
8 Healing environment	744	5.72	.38	745	4.97	1.64	743	5.03	1.41
9 Promote expression of feelings	742	6.00	.27	747	5.17	1.65	748	4.98	1.45
10 Miracles	739	5.56	.37	738	4.88	1.67	739	4.77	1.53
Total	750	5.84	.78	755	5.18	1.40	752	5.04	1.24

CFS-CC, Caring Factor Survey-Caring for Co-workers; CFS-CM, Caring Factor Survey-Caring of Manager; CFS-CP, Caring Factor Survey-Care Provider version; *M*, mean; *n*, number; *SD*, standard deviation

To evaluate construct validity, we tested two models of CFS-CC. Model 1 included 10-items from the original short version in English: items 1, 4, 7, 8, 9, 10, 13, 16, 17, 20 [11]. Model 2 included 10 items (items 2, 3, 5, 6, 11, 12, 14, 15, 18, 19), not in the original English short version. For Model 1, items loaded into one component, with factor loadings between 0.54 and 0.83, and explained 58% of the data variance. The KMO for Model 1 was .92 with the Bartlett's test of sphericity, $\chi^2 = 4078.78$, $df = 45$, $p \leq 0.001$. Model 2 items were loaded into two separate components, with factor loadings between 0.48 and 0.75, and explained 53% data variance. KMO for Model 2 was 0.88 with the Bartlett's test of sphericity being $\chi^2 = 4,512.57$, $df = 45$, $p \leq 0.001$. Cronbach's alpha was 0.90 for Model 1 and 0.89 for Model 2. The corrected item-total correlations ranged from 0.46 to 0.78.

For CFS-CM, all 10 items loaded as a single factor. Factor loadings ranged from 0.76 to 0.85 and explained 78% of the data variance. KMO was 0.91. Bartlett's test of sphericity showed acceptable values ($\chi^2 = 9,717.70$, $df = 45$, $p \leq 0.001$). Cronbach's alpha was 0.96. The corrected item-total correlations ranged from 0.76 to 0.9.

For CFS-CC, all 10 items loaded as a single factor, with factor loadings from 0.72 to 0.86, and explained 80% of variance in the data. The KMO was 0.92 and the Bartlett's test of sphericity also showed acceptable values ($\chi^2 = 9,209.15$, $df = 45$, $p \leq 0.001$). Cronbach's alpha was 0.97. The corrected item-total correlations ranged from 0.81 to 0.91.

Table 12.2 shows descriptive statistics and discriminant validity analysis for the reduced 10-item CFS-CP. Statistically significant differences between both wards were detected for four items (items 8, 10, 13, 17).

Tab. 12.2: Descriptive statistics and discriminant validity for the reduced 10-item CFS-CP.

Caritas process	Reduced 10-item CFS-CP	All	Surgical wards	Internal medicine wards	<i>p</i> -Value
		<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	
1 Practice loving-kindness	Item 1	5.85 (0.75)	5.84 (1.13)	5.86 (1.08)	0.99
2 Decision-making	Item 4	5.51 (1.12)	5.48 (1.20)	5.57 (1.23)	0.159
3 Instil faith and hope	Item 7	6.04 (1.22)	6.09 (0.84)	5.95 (1.03)	0.162
4 Teaching and learning	Item 8	6.01 (0.92)	6.09 (0.80)	5.86 (1.03)	0.008*
5 Spiritual beliefs and practices	Item 9	6.10 (0.95)	6.17 (0.80)	5.99 (1.05)	0.109
6 Holistic care	Item 16	6.04 (0.95)	6.08 (0.92)	5.96 (0.99)	0.118
7 Helping and trusting relationship	Item 13	5.95 (0.96)	6.03 (0.89)	5.80 (1.04)	0.005*
8 Healing environment	Item 10	5.91 (0.98)	5.99 (0.87)	5.77 (1.14)	0.039*
9 Promote expression of feelings	Item 17	6.00 (0.95)	6.07 (0.89)	5.89 (0.99)	0.019*
10 Miracles	Item 20	5.71 (0.93)	6.08 (1.20)	5.67 (1.3)	0.607

CFS-CP, Caring Factor Survey-Care Provider Version; *M*, mean; SD, standard deviation; *p*, statistical significance; *, statistical significance at ≤ 0.05 .

12.5 Discussion

Our study aimed to evaluate the psychometric properties of the CFS for care providers, managers, and co-workers, as perceived by the nursing staff.

The mean values for CFS-CP, CFS-CM, and CFS-CC were all above 4.0, meaning that caring was perceived, overall as average [7]. Nursing staff evaluated themselves as the most caring, while the caring of their manager and colleagues were evaluated with slightly lower scores. Results were consistent with what is found in literature, as nurses tend to describe themselves as caring [23]. The results of this study's when compared with the American CFS-CP results reveal these scores to be equal or slightly lower. Mean values in similar studies were found to be 5.0 [24] or above 6.0 [25]. We found the highest mean for the Caritas process, Teaching and learning. The lowest

score was found for Miracles for CFS-CM and CFS-CC. Allowing miracles and mysteries in nursing is not typical of the Slovenian environment, where the biomedical model still dominates [26]. Interestingly, decision-making was found to be perceived as the worst for CFS-CP. Results suggest that improvements are needed in nursing and in healthcare teams with respect to problem solving and decision-making. In a similar American research, teaching and learning [24], practising loving-kindness [25], and miracles [13] were rated with the highest mean scores, while creating a healing environment [13, 24] and decision-making [25] were rated with the lowest mean values [25].

We have validated the construct of Caritas processes for the reduced 10-item CFS-CP, CFS-CM, and CFS-CC. Results of the Bartlett's test of sphericity and the KMO confirmed the appropriateness of PCA. All items in the CFS-CP Model 1 for CFS-CM and CFS-CC were loaded as a single factor, suggesting that items belong to the same construct. A shorter instrument is less time-consuming to complete, which could reduce the reluctance to participate in research and increase the response rate. Instruments were found to be reliable, as Cronbach's values were greater than 0.70. Considering the satisfactory discriminant validity, CFS-CP can be helpful for assessing differences in caring perceptions among different groups.

Limitations of our study include convenience sampling and inclusion of only two wards in hospital settings. Criterion validity and retest reliability should be evaluated in further research, which should also include other settings.

12.6 Conclusion

The study found that the Slovene version of the reduced construct to measure the Caritas processes from the care providers' perspective, CFS-CP, CFS-CM, and CFS-CC are valid and reliable tools that can be further used in hospitals. These tools enable further research of the links between caring perceptions, and patient and organizational outcomes.

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